# PROGRESS

OF

# MEDICAL SCIENCE.

## THERAPEUTICS.

UNDER THE CHARGE OF

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### PHENACETIN.

Of the many reports on the use of phenacetin, or acetphenetidin, one recently made by DR. FRIEDRICH MÜLLER (*Therapeutische Monatshefte*, August, 1888) is of unusual merit. He made numerous trials of the remedy in various diseases, and found that the temperature in adults was lowered by doses of from seven to eleven grains, and seldom as much as fifteen grains was used. The fall in the temperature occurred within from one to four hours, and was accompanied in most cases with perspiration, but without disagreeable sensations.

During the apyrexia, which lasted from three to five hours, the patients were quite comfortable, having a better appetite and more sleep. The rise in temperature was unaccompanied by a chill. For the patient's comfort it is desirable to avoid alternate fall and rise in the temperature. If the drug is administered continuously, the temperature rises in spite of it, and after some days the system becomes habituated to the agent, and larger and larger doses are required—in fact, so large as possibly to become dangerous. He has observed marked cyanosis from 90 to 120 grains daily.

Nothing more is accomplished by phenacetin than by the other antipyretics, for example, antipyrin; but it has the advantage of less unpleasant accompaniments. It is tasteless, vomiting and indigestion appear only exceptionally, ringing in the ears, or exanthematous eruptions, or signs of renal irritation were not observed. In some cases phenacetin seemed to promote diarrhœa.

Like some other antipyretic agents, phenacetin possesses the property of quieting pain, and has been employed to relieve headache, except that connected with organic cerebral disease, or uræmia. For this purpose forty-five, or even seventy-five, grains a day are required. In some neuralgic affections the pain is relieved by phenacetin, and for such purposes it seems to be in no wise inferior to antipyrin and antifebrin.

In twenty-four cases of acute articular rheumatism, prompt relief from fever and the pain and swelling in the parts was obtained in fifteen cases, and disappeared wholly in from two to nine days, in four cases no improvement followed, and in six the condition was not affected. Of these six, two were of gonorrhœal origin, and two were considered cases of chronic rheumatism.

Phenacetin, it would seem, deserves to be placed in the same rank with antipyrin and antifebrin as an antipyretic, and also as a means of relief in rheumatism and neuralgic pains. It is interesting to note that phenacetin possesses practically no antiseptic qualities.

### COCAINE.

Any observations which will suggest the limits of safe doses for cocaine have a very practical interest. DR. SZUMANN, in the *Therapeutische Monatshefte*, suggests, for adults, one-half, or three-fourths, to one grain, subcutaneously. With such doses he saw no untoward effects; one grain, however, is adapted only to robust individuals. Some patients will, of course, bear very large doses, among them certain opium-takers, who have used as much as seven to thirty-seven grains daily, though one may get toxic symptoms in such patients from an injection of one and a quarter grains.

With nervous patients, and also with those having cardiac disease, as well as those inclined to cerebral congestion, large doses of cocaine may prove dangerous on account of the marked effect on the heart and circulation, as Alexander Fränkel has very properly emphasized.

### COCAINE IN GENERAL ANÆSTHESIA.

This method varies from that mentioned in the September number of this JOURNAL (page 288), in that the cocaine is injected for its local anæsthetic effect at the seat of operation, after the general anæsthesia has been induced. Though both substances are administered for the same end, their combined use, according to PROF. OBLINSKI, excludes certain dangers of the separate employment of each. In cocaine we possess an excitant which is the best possible antidote to the action of chloroform in paralyzing heart and vessels. So the use of chloroform is a good measure against the symptoms of brain anæmia that cocaine often produces. The amount of chloroform used is less—vomiting occurs less often, and especially noteworthy is the gentle recovery.—*Wien. med. Wochenschrift*, 1888, Nos. 15 and 16.

### ON THE ADMINISTRATION OF SULPHONAL.

In the *Therap. Monatshefte* of July 2, 1888, KAST, the discoverer of sulphonal, gives some experimental conclusions directed to the point of the retarded activity of sulphonal. From published papers (Cf. Lovegrove, *Brit. Med. Journal*, 1888, p. 1112) and private communications he has learned that many have found that the primary hypnotic action is postponed too long—*i. e.*, two or three hours or more, and that the effect lasts longer than is wished —*i. e.*, into the succeeding day.

Two important qualities distinguish sulphonal, he observes: First, its insolubility; second, its resistance to chemical change. Sulphonal is soluble, he finds, by exact estimation in eighteen or twenty parts of boiling water, but it recrystallizes on cooling. At blood-heat, 450 parts of water are necessary to dissolve one part of sulphonal. Addition of salts considerably increases its solubility—thus it is easily soluble in concentrated mineral water. The addition of an amount of hydrochloric acid, corresponding to the proportion in the gastric juice, increases its solubility one-half. In artificial gastric juice it is soluble 1:200, at the temperature of the body, and it was not reprecipitated for several hours after neutralizing. Peptones prevented the reprecipitation of a very concentrated solution made in hot water.

As to the absorption, Kast found that very small quantities of sulphonal were present in the intestine of a dog killed two hours after the ingestion. After six hours none could be demonstrated in the gastro-intestinal tract, but small quantities were found present in the blood.

These facts lead to the determination of the best method of administration. This should be in a good quantity of warm water in the early evening hours, and best with the supper. In this way advantage is taken of those conditions favoring a rapid solution, viz., a fairly large quantity of water with a good proportion of hydrochloric acid, and salts and peptones in rich abundance.

### Method of Testing a Hypnotic.

As many physicians will undoubtedly be led to experiment with some of the numerous new hypnotics, a mention of Rosenbach's cautions will certainly be profitable. Recognizing the importance of the mental attitude of the patient as a factor, he advises, first that the hypnotic be given without the knowledge of the patient at times other than bedtime; second, if the results appear good, that the patient be made acquainted with the experiment, and then an indifferent substance be substituted, to be alternated now and then with the hypnotic; and finally, it is to be given to patients, without their knowledge, who are not in bed.—*Berl. klin. Wochenschrift*, 1888, No. 24.

### The Absorption of Cod-liver Oil—Lipanin.

Physiologists have always been at work upon the question, What makes cod-liver oil more digestible and assimilable than other oils and fats? The explanation was in turn found in the iodine present, in its property of passing through animal membranes more easily, and, finally, it was asserted that it was no different from any other fat. Each of these views was in turn disproven and gave place to that which has prevailed for a decade, since it was first set forth by Buchheim. This finds the key in the larger proportion of free fatty acids present, which assist in the emulsification of the fat after the oil has reached the duodenum. In general, though, the proportion of free acid in ol. morrhuæ is very variable, and for this reason and because of the disagreeableness of the oil, Mering (*Therap. Monatshefte*, 1888, p. 49) had made a substitute which has been put into the market under the name of lipanin (λιπαίνω, to fatten). This consists of olive oil containing six per cent. oleic acid, of pleasant taste and emulsifying very easily. Mering has used it now in forty cases of rickets, phthisis, etc., and in all the effects on nutrition was positive, the weight increasing. No symptoms were noted on the side of the digestive tract. The dose is the same as for cod-liver oil.

Recently MARPMANN, an apothecary in München, has taken up the subject again and thrown new light upon it (*Münch. med. Wochenschrift*, July 7, 1888).

The digestion of fat is a subject about which we possess but little accurate knowledge, but it seems improbable that the small quantity of fatty acid present in cod-liver oil can be of so much importance when we consider that *neutral* fats in food are perfectly well borne and assimilated, and that the pancreatic juice has the power to split up a neutral fat into fatty acid and glycerin. Marpmann, then, was not satisfied with the fatty acid theory, and looking for another source finds it in the stomach, to which, before him, no attention had been directed. Fat is better borne the more intimately it is mixed with the food and saliva—*i. e.*, the better it is prepared to pass the stomach; oil in any considerable quantity upsets the stomach, because it envelops the food and prevents gastric digestion, and when one fat is found better borne than another, the ground is to be sought in the way such a fat behaves *in the stomach.*

Impelled by such considerations as these, Marpmann tested various oils with artificial gastric juice. All the oils shaken with the gastric juice separated immediately on standing, but cod-liver oil remained emulsified for fifteen minutes, and after twenty-four hours had cleared up only one-half. Here, then, according to Marpmann, is the explanation of the superiority of cod-liver oil, viz., that it passes out of the stomach and meets the pancreatic juice *after it is already in a finely divided state*, while other oils, keeping their independent existence in the stomach, enter the intestine in the form of large drops.

By the same experiment lipanin refuses to mix with the gastric juice, but separates its oil quite pure after a few minutes; a mixture of olive oil and phosphoric acid separates just as pure olive oil. These facts prove that the miscibility of cod-liver oil with the gastric juice cannot depend upon its containing free acid. On the other hand, first, fat-peptonate, another substitute for cod-liver oil, consisting of cod-liver oil and olive oil mixed with pancreatic juice, and, second, a mixture of olive oil and oleate of soda, mix, the first completely, no oil separating in twenty-four hours, and the second about as cod-liver oil.

These facts allow us, Marpmann believes, to suppose that the active ingredient in cod-liver oil is a small quantity of some salt of a fatty acid. Later he has obtained from cod-liver oil, by ether and alcohol, a substance which, dissolved in water, gives other fats the properties of cod-liver oil, and which is likewise present in the pancreatic fluid.

One practical conclusion which Marpmann draws is that cod-liver oil should be mixed with the food and prepared in the mouth, rather than drunken.

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## BORIC ACID IN ANTISEPSIS.

In the *Journ. de méd. de Paris*, 1887, vol. ii. p. 180, some notice was given a substance called antifungine, which was shown to be borate of magnesia, soluble in four parts of boiling water, and possessing in fifteen per cent. solution very energetic antiseptic and disinfecting properties. In the same journal of July 15, 1888, directions are given for making a substance like this, and possessing its same qualities. Dissolve one part of calcined magnesia in seventy-five parts of water on a water bath, and add boric acid to the point of making the solution cloudy. This will require 12.4 parts of boric acid. After evaporation, the ground residue makes a white powder of sweet taste, soluble in four parts of water, and the solution is strongly antiseptic. This substance removes the disadvantage of boric acid in point of insolubility.

### ANTISEPTIC PROPERTIES OF AMMONIA.

GOTTBRECHT (*Deut. med. Woch.*, July 19, 1888) calls attention anew to the antiseptic properties of ammonia. These were long ago discovered by Richardson, though but little has been thought of the fact. Gottbrecht finds that a solution containing liquor ammoniæ in proportion of 1:100, keeps meat from decaying seven days, and in proportion of 2:100, and 4:100, two and a half months; while meat kept over a year in 5 to 8 per cent. solutions. Cultures of this last gave negative results. Like Richardson, so Gottbrecht finds the source of this control in the strong reducing power of ammonia.

### SACCHARIN AS AN ANTISEPTIC.

M. CONSTANTINE PAUL finds that saccharin possesses marked antiseptic powers. A 1 : 700 solution controls the development of the staphylococcus pyogenes aureus, and because it prevents the development of all microbes contained in the saliva, etc., and a 1: 200 solution prevents ammoniacal change in the urine, he recommends its use in solutions for lavage of the stomach and bladder.

A 1 : 500 solution hinders in an appreciable manner the action of pepsin on the white of egg, fibrin, etc., and of diastase on starch, but does not arrest either action entirely. This may perhaps account for the digestive disturbances referred to by M. Worms (*vide* September number, p. 287), because it cannot be said to be in any way toxic, being eliminated entirely unchanged by the urine. Another explanation might be found in the condition of the kidneys. Saccharin has been made the subject of much discussion in France, and Girard, director of the municipal laboratory of Paris, demanded that its sale be stopped because of its extensive and growing use in adulteration of syrups, liquors, and food. Under the name of sucre de Cologne it has been sold at a low rate (four cents a German pound), and there is, besides, no duty on it.—*Comptes rend. de l'acad. de méd.*, July 13, 1888, and *Gaz. Hebdom.*, August 3, 1888.

### IODOFORM IN HÆMOPTYSIS.

CHAUVIN and JORISSENNE (*Prag. Med.*, May 19, 1888, p. 387) have found the best comparative results in the treatment of hæmoptysis from the use of iodoform, gr. j. in pill, twice a day. Their observations rest on a large series of cases, and, therefore, are worthy of attention.

### DIURETIC ACTION OF STROPHANTHUS.

LEMOINE finds polyuria the most constant of the effects of strophanthus. Experiments on healthy persons with gtt. 5–6 of tincture gave double the quantiy of urine in forty-eight hours. The same success was obtained in cardiac cases; as a rule, the persistence of the diuresis was marked. A secretion of ℥ xiij was increased to three quarts, and five days after suspending its use was still two quarts. In three cases a very abundant serous diarrhœa was caused, only to be controlled by stopping the drug.—*Comptes rend. de Soc. d. Biol.*, June 15, 1888.

### SIMULO AS AN ANTIEPILEPTIC AND ANTIHYSTERIC.

EULENBURG (*Therapeutische Monatshefte*, 1888, 353) has made trial of the tincture of simulo, prepared from the fruit of *Capparis corriacea* recently recommended for the treatment of epilepsy by W. Hale White in the *Lancet* of March 31st. He administered it during a long period of time to four cases of epilepsy and three of grave hysteria. The dose employed was one-half to two teaspoonfuls two or three times a day. In the hysterical cases it proved absolutely useless, even as a palliative. The bromides, properly administered, have proved themselves the best means we possess in the treatment of epilepsy. There are cases, however, in which, through some idiosyncrasy, they produce maniacal excitement, convulsions, or delirium; though these are rare; others in which their action is too depressant to allow of their continuance, and still others in which they exert only a partial control over the frequency and intensity of the paroxysms. It was to be hoped that simulo might prove of value as a substitute in such cases, but in only one of the four in which trial of it was made, were the results sufficiently encouraging to warrant further experiment with it. This case was that of a man of eighteen years, who for seven years had suffered from frequent well-marked attacks of epilepsy, and in whom improvement up to a certain extent had followed the use of the bromides. During five months he was given the bromides for one to two weeks, and then the tincture of simulo for an equal time. It was always the case at first that the attacks were less frequent, and the patient felt better during the time that the simulo was being administered; but finally the drug seemed to lose its power and had to be suspended, since the paroxysms grew more frequent. In the other three cases of epilepsy the action of the new drug was evidently weaker and more uncertain than that of the bromides in moderate doses.

### CODEINE AND MORPHINE IN DIABETES.

DR. MITCHELL BRUCE has compared the effects of these alkaloids in two classical cases of diabetes. The observations extended over several months, and were made with great care. The sugar in the urine was first reduced to a minimum by a strictly antidiabetic diet, and then one of the drugs was administered to both patients, and its effects on the sugar were noted. Phosphate of codeine was given hypodermatically, and the dose was gradually increased to more than twenty grains a day. After an interval on strict diet, acetate of morphine was given to both patients, up to as high as five or six grains per diem. Of the two drugs, the morphine proved to be the more efficacious, as under it the sugar was more completely controlled. Codeine is much more expensive than morphine, and large doses of it are necessary. Narcotic effects from morphine seldom presented themselves so long as the sugar continued to fall.

Dr. Bruce found some difficulty in removing the last traces of sugar, and he suggested that in practice we should be satisfied with reducing the sugar to a small amount, rather than use the large doses required to free the urine from it completely.

The full report of this carefully conducted inquiry may be found in *The Practitioner* for July.

### GLYCERITE OF STARCH AS A SURGICAL DRESSING.

CHARLES E. FLEMING, M.R.C.S. (*British Medical Journal*, September 22d), has found a non-irritating dressing which does not evaporate at ordinary temperatures, does not allow the discharges to get caked or hard, while it is freely miscible with them. It may have some antiseptic dissolved in it. The starch added to the glycerine makes it more convenient to apply, and, in addition, forms a non-irritating surface to apply to the wound, and is a mechanical protection.

It is most conveniently used, thickly spread on one or more layers of Gamgee tissue, or some absorbent wool; it may be removed with the greatest ease from any wounded surface. The glycerine itself is hygroscopic, does not usurp the place of the discharge, nor prevent the free escape of watery vapors. Such a dressing, after several days, will be found moist, soft, flexible, and heavy with the quantity of fluid it contains. Next the wound there is a jelly-like layer, which may be removed readily, and the sutures, if any, are distinctly seen and easily taken out. Its use in skin-grafting is suggested.

### MENTHOL IN PRURITUS LABII.

The application is made by rubbing the affected surface two or three times with solid menthol; it produces some burning pain at first, but is followed by a most comfortable sense of coolness, and the congested color of the vulva almost disappears.—*British Medical Journal*, September 1, 1888.

### CREOLIN.

AMON, as well as other writers in the surgical field, has used creolin with satisfactory success in obstetrics and skin diseases; he also obtained good results in tuberculosis.

In pulmonary tuberculosis, and other allied diseases, accompanied with more or less secretion, he used creolin inhalations, and found that they were inhaled easily and without harm. He began with one-half per cent. solutions and increased them to two per cent. The inhalations had a favorable effect upon the expectoration, and in almost every case the amount of the secretion decreased perceptibly, and after some days the patients felt relieved. No effect upon the course of the fever was observed. In cases in which there were bad smelling excretions, they either became odorless, or the offensive odor was much mitigated.

In the last stage of tuberculosis Amon saw no beneficial effect from creolin. In two cases, in which infiltration of the apices, or only slight extension of the process over an upper lobe existed, a marked and favorable local result was perceived (diminution of the râles and less dulness). He has used it successfully in diphtheria.—*Schmidt's Jahrbücher*, vol. ccxix.

### LARGE DOSES OF DIGITALIS IN PNEUMONIA.

PROF. PETRESCO gives a most astonishing account of the results of this remedy in pneumonia. He used an infusion made from one to two drachms of digitalis leaves, in some cases even three drachms in the twenty-four hours, with, he claims, complete success.

Since 1883 he has employed in pneumonia nothing except an infusion of one drachm of digitalis leaves in eight ounces of fluid, a tablespoonful every half hour. As a rule, the malady was strangled in three days. "The fever and all the physical signs, local as well as general, disappeared as if by enchantment."

The temperature fell, after about three doses of a drachm of the leaves, from 104°–105° to about 96°; the pulse from 120–130 down to 30–36, a minute.

The general condition of the patients improves in a most surprising manner; they wake up as if from a sound sleep, express themselves as feeling very well, and ask for something to eat.

The mortality in these cases was only 1.22 per 100. He even goes so far as to say that he is convinced that the mortality in this disease may be reduced to zero if these doses are given early.

As illustrating the tolerance and harmlessness of these doses of digitalis he refers to 577 observations published in his treatise on *Therapeutics*, in 1884, and to the theses of his students.—*Gazette Hebdomadaire*, Aug. 24, 1888.

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## MEDICINE.

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### ON VERATRUM VIRIDE IN DIPHTHERIA.

In 1881, J. M. BOYD (*Medical Record*, 1888, 33, 627) was induced to give a child of four months, suffering from malignant diphtheria, full doses of Norwood's tincture: viz., a drop every two hours. After four or five doses the pulse fell from 180 to 80, and coincidently with this the abundant deposit melted away with great rapidity, and in twenty-four hours the occlusion of the nose and larynx had so far disappeared that the child was again able to nurse. Since this time the author has seen upward of seventy cases of the disease, and in no instance has the timely use of veratrum disappointed him. The medicine should be given early and in full doses, and made the essential feature of the treatment; the slowing of the pulse being the *sine qua non.*